Multi Format LCD MONITOR

Service Manual

24" Multi Format LCD Monitor

LQM-241W

TVlogic

Caution

• Always use set voltage.
  - AC 100 ~ 240V
  - DC 24V [Tpy. 3.2A]

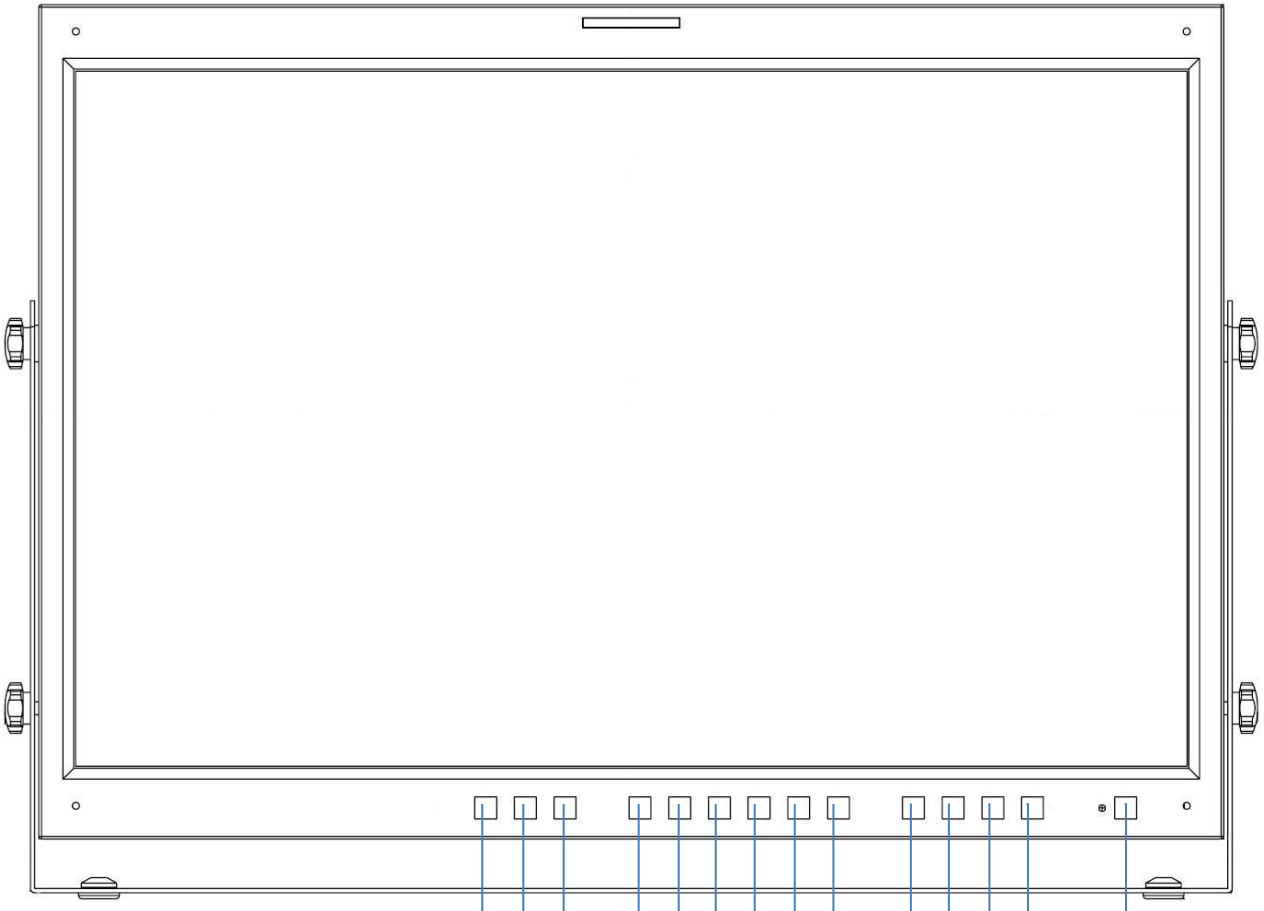
All operating instructions must be read and understood before the products is operated.
• These safety and operating instruction must be kept in safe place for future reference.
• All warning in this instruction must be observed closely and be followed.
• Do not use attachments not recommended by the manufacturer. Use of inadequate attachments can result in accidents.
• If you are not sure of the type of power supply used in your home, consult your dealer or local power company. For units designed to operate on batteries or another power source, refer to the operating instruction.
• The power cord must be routed properly to prevent people from stepping on them or objects from resting on them. Check the cords at the plugs and products.
• Do not overload DC outlets or extension cords. Overloading can cause fire or electric shock.
• Do not attempt to service the products yourself. Removing covers can expose you to high voltage and other dangerous conditions. Request a qualified person to perform servicing.
• If any of the following conditions occurs, unplug the power cord from the DC outlet, and request a qualified service person to perform repairs.

a. When the power cord or plug in damaged.
b. When a liquid was spilled on the products or when objects have fallen into the products.
c. When the products have been exposed to rain or water.
d. When the products have been dropped or damaged.
e. When the products display an abnormal condition. Any noticeable abnormality in the products indicate that the products need servicing.

• Upon completion of service of repair work, request the service technician to perform safety checks to ensure that the products is in proper operating condition.
• Keep the products away from direct rays of the Sun-light.
• Do not place the products on an unstable cart, stand, tripod or table. Placing the products on an unstable base can cause the products to fall.
• When you disassemble the products, you lay smooth fabric so that the products keep away from scratch.
• When you assemble the products, you set the electronic screwdriver's torque as less than 2k and screw each bolt and check if the cables connect properly. Setting the torque as more than 2k can cause the case broken.

Part Name & Function

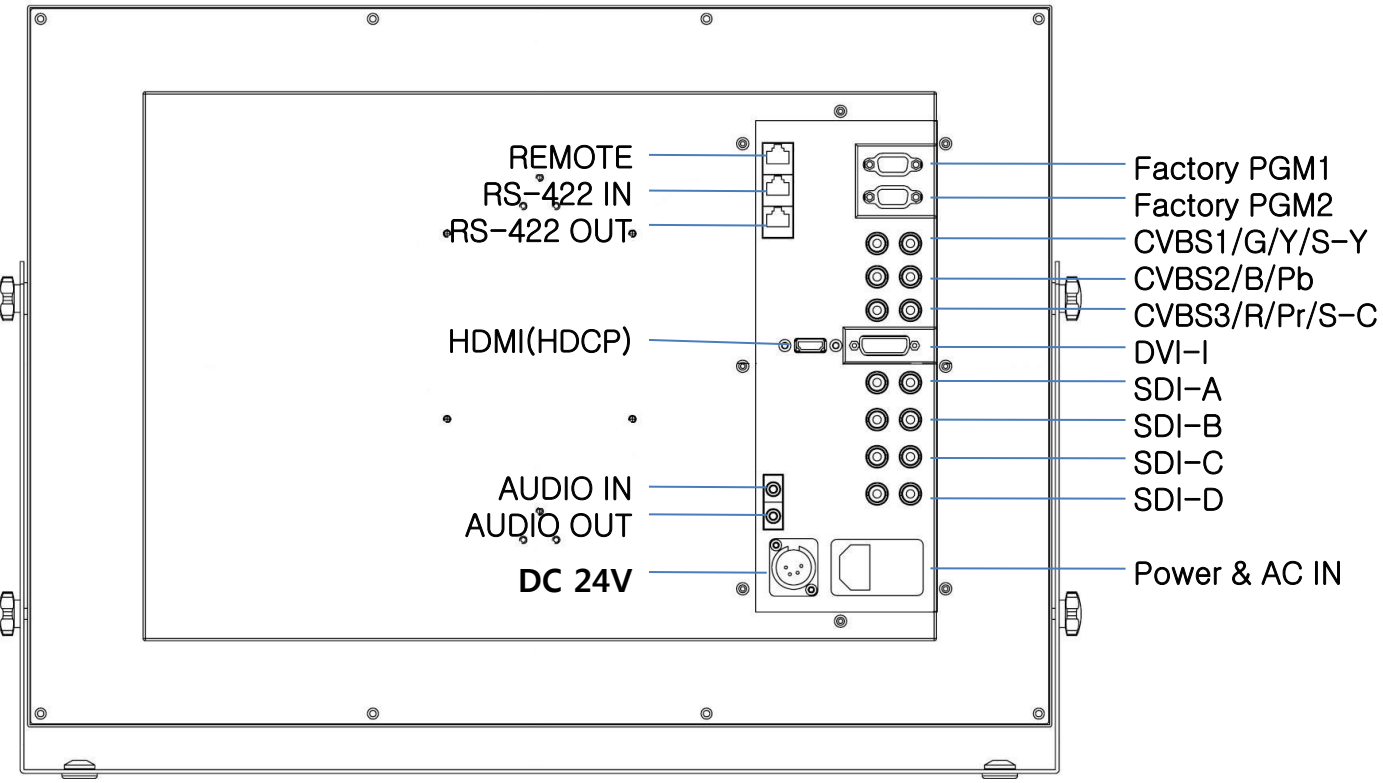
<FRONT>



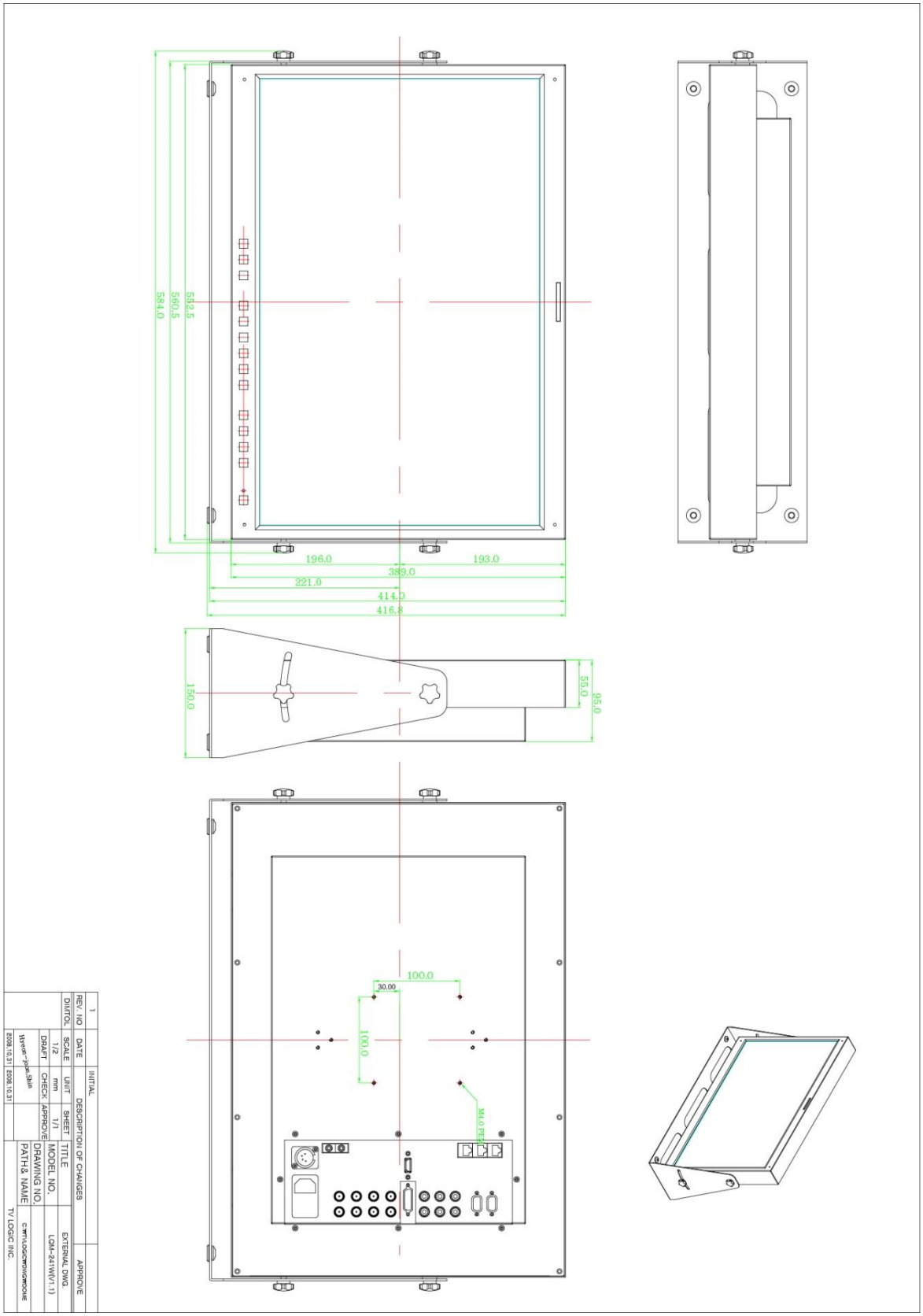
ANALOG
MODE
QUAD
SCAN
ASPECT
MARKER
H/V DELAY
BLUE ONLY/MONO
CHROMA/PHASE/SCREEN SEL
MENU
DOWN/BRIGHT
UP/CONTRAST
ENTER/VOLUME
POWER

Part Name & Function

<REAR>



Drawing



REV. NO	DATE	DESCRIPTION OF CHANGES	APPROVE
1	INITIAL		

DIM/TOL	SCALE	SHEET	EXTERNAL DWG.
	1/2	1/1	
UNIT	mm	TITLE	LGM-241W(V1.1)
DRAFT	CHECK	APPROVE	MODEL NO.
			DRAWING NO.
			PATH& NAME
2008.10.31	2008.10.31		C:\MY\LOGIC\DWG\MYDWG.DWE

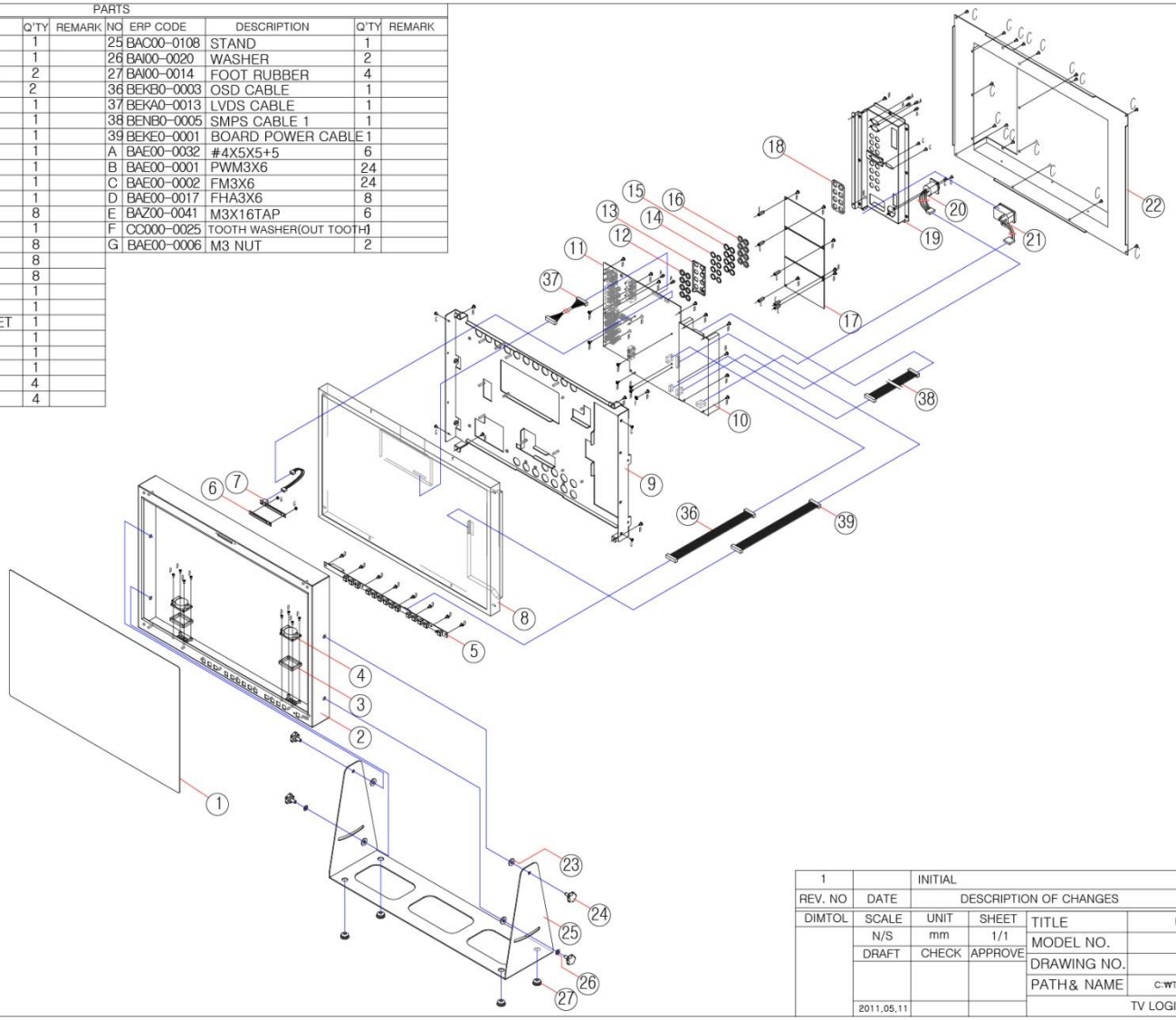
TV LOGIC INC.

Disassemble Drawing

PARTS

NO	ERP CODE	DESCRIPTION	Q'TY	REMARK
1	BEAD1-0004	PROTECTOR FILM	1	
2	BAC00-0011	FRONT	1	
3	BAI00-0011	SPEAKER RUBBER	2	
4	CBAC0-0006	SPEAKER	2	
5	BEMC0-0010	KEY BOARD	1	
6	BAA00-0019	TALLY	1	
7	BEMD0-0001	TALLY BOARD	1	
8	BDB00-0009	PANEL	1	
9	BAC00-0076	MAIN BRACKET	1	
10	BENB0-0005	PVP-1560	1	
11	BEMA0-0047	MAIN BOARD	1	
12	D0000-0007	BNC RING	8	
13	BAC00-0133	BNC BRACKET	1	
14	DD000-0005	BNC RING	8	
15	DAE00-0108	TOOTH WASHER	8	
16	BAE00-0087	GEXAGON NUT	8	
17	BEMB0-0008	SUB BOARD	1	
18	BAZ00-0037	EMI GASKET(SDI)	1	
19	BAC00-0076	TERMINAL BRACKET	1	
20	BEKZ0-0015	DC JACK	1	
21	BEKZ0-0014	AC JACK	1	
22	BAC00-0021	REAR	1	
23	BAI00-0019	WASHER	4	
24	BAA00-0007	STAND KNOB	4	

NO	ERP CODE	DESCRIPTION	Q'TY	REMARK
25	BAC00-0108	STAND	1	
26	BAI00-0020	WASHER	2	
27	BAI00-0014	FOOT RUBBER	4	
36	BEKB0-0003	OSD CABLE	1	
37	BEKA0-0013	LVDS CABLE	1	
38	BENB0-0005	SMPS CABLE 1	1	
39	BEKE0-0001	BOARD POWER CABLE	1	
A	BAE00-0032	#4X5X5+5	6	
B	BAE00-0001	PWM3X6	24	
C	BAE00-0002	FM3X6	24	
D	BAE00-0017	FHA3X6	8	
E	BAZ00-0041	M3X16TAP	6	
F	CC000-0025	TOOTH WASHER(OUT TOOTH)	1	
G	BAE00-0006	M3 NUT	2	



REV. NO	DATE	DESCRIPTION OF CHANGES	APPROVE
1		INITIAL	

DIMTOL	SCALE	UNIT	SHEET	TITLE	EXPLODE VIEW
	N/S	mm	1/1	MODEL NO.	LQM-241W
	DRAFT	CHECK	APPROVE	DRAWING NO.	
				PATH& NAME	C:₩TVLOGIC₩DWG₩DOME
	2011.05.11			TV LOGIC INC.	

DVI ANALOG/DIGITAL Supportive Resolution

DVI ANALOG/DIGITAL Supportive Resolution

• DVI-ANALOG :

Resolution	Frequency
640 × 480	60Hz, 75Hz
720 x 400	70Hz
800 × 600	60Hz, 72Hz, 75Hz
1024 × 768	60Hz, 70Hz, 75Hz
1366 x 768	60Hz/75Hz
1280 x 1024	60Hz/75Hz
1600 x 1200	60Hz
1920 x 1080	60 Hz

• DVI DIGITAL Graphic Mode :

Resolution	Frequency
640 × 480	60Hz, 75Hz
800 × 600	60Hz, 72Hz, 75Hz
1024 × 768	60Hz, 70Hz, 75Hz
1366 x 768	60Hz/75Hz
1280 x 1024	60Hz/75Hz
1600 x 1200	60Hz
1920 X 1080	60hZ
1920 x 1200	60 Hz

• DVI DIGITAL Video Mode :

SMPTE-274M	1080i (60 / 59.94)
SMPTE-296M	720p (60 / 59.94)
SMPTE-125M	480i (59.94), 480p(59.94)

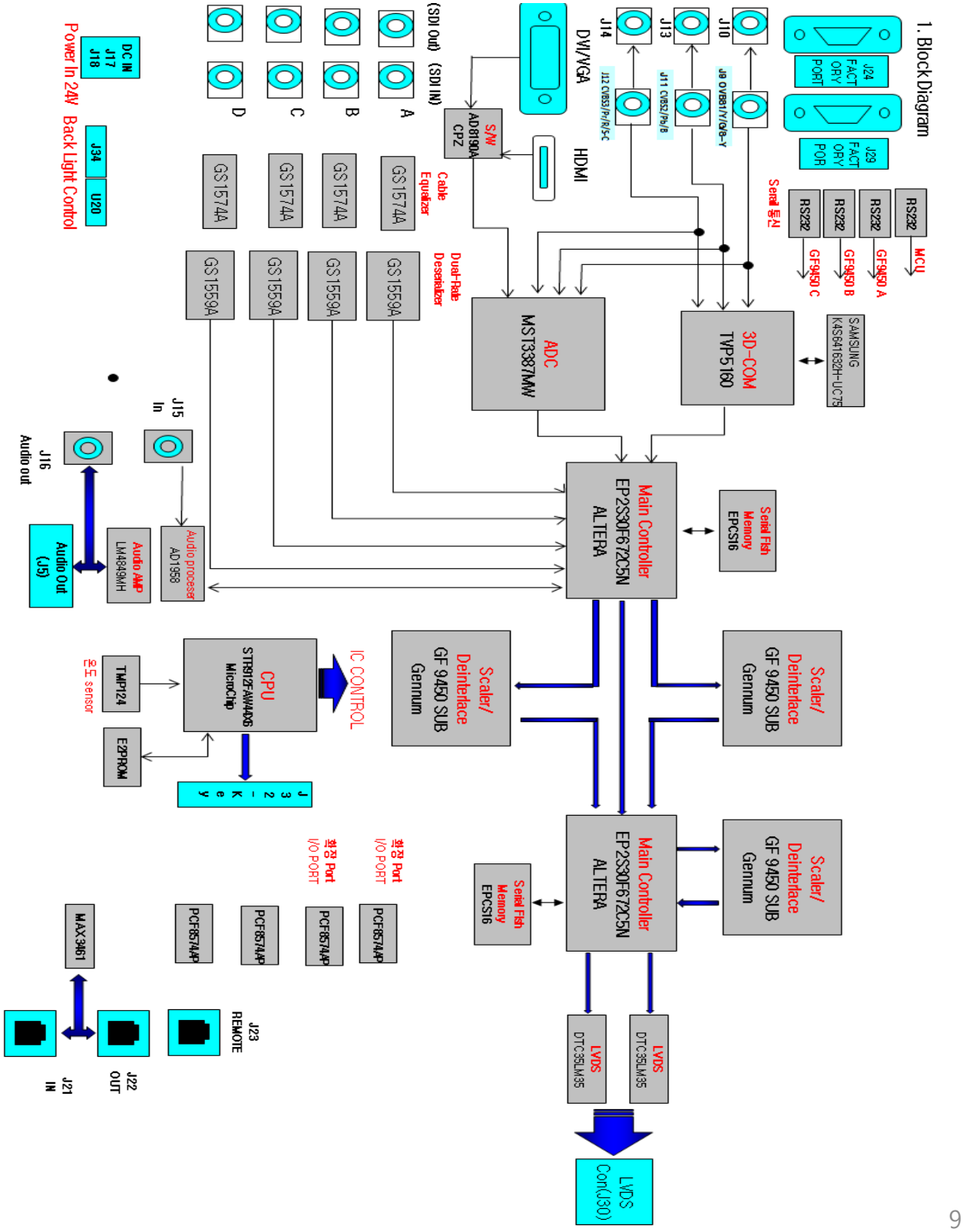
• DVI DIGITAL has two type : Graphic and Video.
• As in DVI ANALOG/DIGITAL mode, if it is not setting ZERO Scan on Scan mode, the screen might be shown as an abnormal image.
• .If the setting on Aspect mode not Wide Screen, you can push ASPECT button then it shows Wide Screen.

Specification

		LQM-241W
Input	1 x DVI-I	DVI-I(RGB) IN
	3 x BNC	Analog Input
	4 x BNC	SDI A/B/C/D Channel Input
	1 x HDMI	HDMI Input
Output	3 x BNC	Analog Output
	4 x BNC	SDI A/B/C/D Channel (Active Through Out)
Input Signal	Analog	Composite / S-Video / Component / RGB
	HD-SDI	1.485Gbps
	SD-SDI	270Mbps
	DVI	VESA/IBM Modes
	HDMI	480i/480p/720p/1080i & VESA/IBM Modes
Analog Input Spec	Composite	1.0Vpp (With Sync)
	S-Video	1.0Vpp (Y With Sync), 0.286Vpp(C)
	Component	1.0Vpp (Y With Sync), 0.7Vpp (Pb,Pr)
	RGB	1.0Vpp (G With Sync), 0.7Vpp (B,R)
SDI Input Signal Formats	SMPTE-274M	1080i (60/59.94/50)
		1080p (30/29.97/25/24/24sF/23.98/23.98sF)
	SMPTE-296M	720p (60/59.94/50)
	SMPTE-260M	1035i (60/59.94)
	SMPTE-125M	480i (59.94)
	ITU-R BT.656	576i (50)
	2K Format	2048 x 1080(23.98p/psf, 24p/psf)
Audio In		Embedded Audio / Analog Stereo (Phone Jack)
Audio Out		Analog Stereo (Phone Jack). Internal Speaker(Stereo)
LCD	Size	24"
	Resolution	1920 x 1200 (16:10)
	Pixel Pitch	0.270(H) x 0.270(W) mm
	Color	16.7M(true 8bit)
	Viewing Angle	H : 176 degrees / V : 176 degrees
	Luminance of white	500 cd/㎡(Center)
	Contrast	1000:1
	Display Area	518.4(H) x 324.0(V) mm
Power		24V DC / AC100~240V
Power Consumption (Approx.)		77 Watts(Max)
Operating Temperature		0°C to 40°C (32°F to 104°F)
Storage Temperature		-20°C to 60°C (- 4°F to 140°F)
Main Body Dimensions (mm/inch)		552.5 x 389 x 95 (21.73 x 15.31 x 3.74)
Main Body Dimensions (With Stand)		586 x 417 x 150 (23.07 x 16.41 x 5.90)
Weight		11Kg / 24.2 lb
Accessory		AC Power cord, Manual
Option		Carrying case, 19" Rack Mountable Kit, ND Filter

* 위 사양은 예고 없이 변경될 수 있습니다.

PCB Block Diagram



Circuit Operation Progress

• SDI (J1, J3, J5, J7) is sent to Main Controller(FPGA) through GS1574, GS1559

• ADC is available to deal with video signals relating to RGB/ YPbPr / HDMI / DVI and having Scaler function.

• ADC sends the receiving signal to Main Controller(FPGA). Main Controller makes U5,U6(DTC35LM35) and RGB 10bit from TTL 30bit dual ports output.

• U5, U6(DTC35LM35) is converter for LVDS signal.

• 3D-ROM handles with CVBS1~3.

• In order to use 3D-COM, SAMSUNG K4S641632H-UC75 is needed.

• HDMI, DVI, RGB, and YPbPr don't get a signal at the same time.

• After changing Digital signal into Analog one, Audio AMP(LM4849) amplifies audio then puts out Audio Out(J16).

•Main Controller gives data processing to Scaler/Deinterlace. Scaler/Deinterlace controls graphic processing or screen output like Zoom in/out.

• Serial Flsh Memory is for saving Main Controller data.

• CPU controls all circuits.

• Key Control is controlled by CPU.

• Scaler/Deinterlace have 4 of DDR, save images, and load them whenever needed.

• PCF8574's role is to extend I/O port.

• GPI Remote(J23) consist of parallel switch then control monitors the outside.

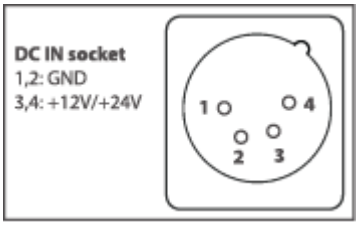
• GPI IN/OUT(J21, J22) controls protocol monitors or supports TSL protocol.

• RS232(J29) is for calibrating monitors using calibration tools.

• **[Ethernet & USB]**
  - Easily update new program such as new function, debug, and etc..

• **~ AC IN**
  - 100 ~ 240V AC 50/60Hz

• **DC 12V/24V IN**
  - 12V/24V DC(LVM-171W) or 24V DC(LVM-241W).



PROGRAM UPDATE – LMP200

LCD programmer user manual (Model: LMP – 200)

1. Parts of Device

A. LCD programmer (LMP – 200)

B. Program download cable (15 pin D-SUB)

C. EDID download cable

2. Device Description

A. USB CONNECTOR: USB port to connect to your PC

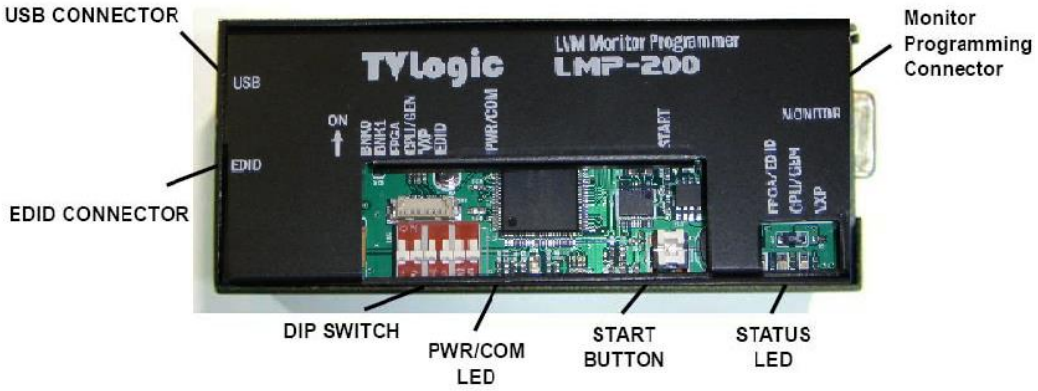
B. EDID: EDID cable port to connect to TVLogic monitor

C. DIP S/W: Switch to select Bank # and Firmware upgrade

D. PWR/COM LED: Power LED (also a communication status LED)

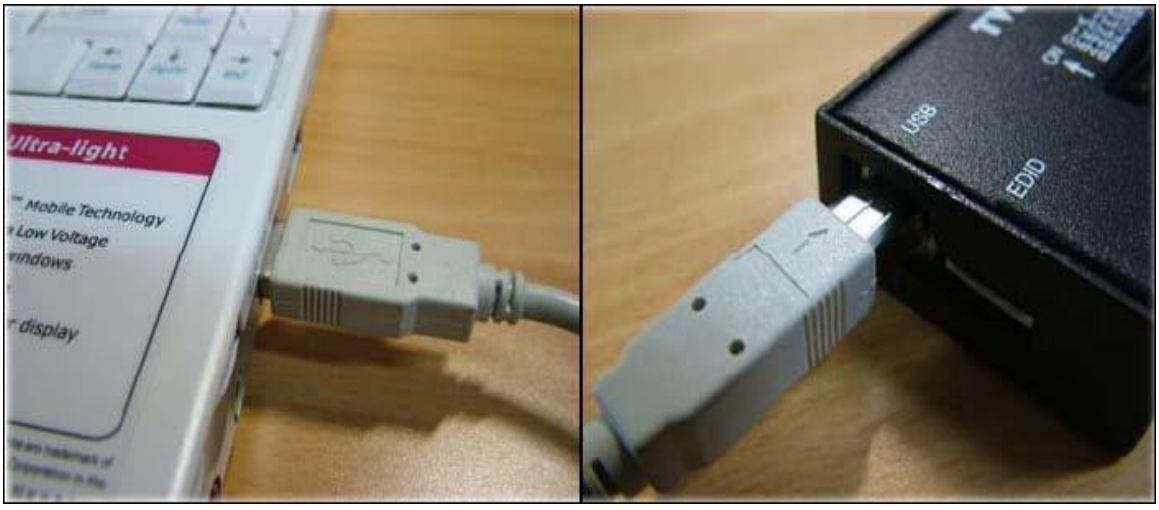
E. START BUTTON: Button to start a firmware update to TVLogic monitor

F. Monitor Programming Connector: Connector to connect to TVLogic monitor's Factory PGM port



3. LCD Programmer Installation

A. Connect the LMP-200 and your PC with USB cable.



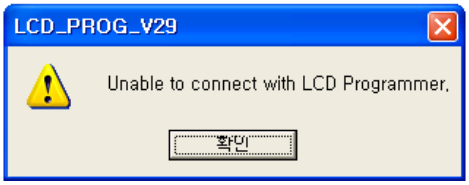
B. If device driver ("CyUSB.sys") is installed to your PC, it will automatically recognize the LMP-200. If not, Install the driver by running "**Add New Hardware**" from your PC's Control Panel.

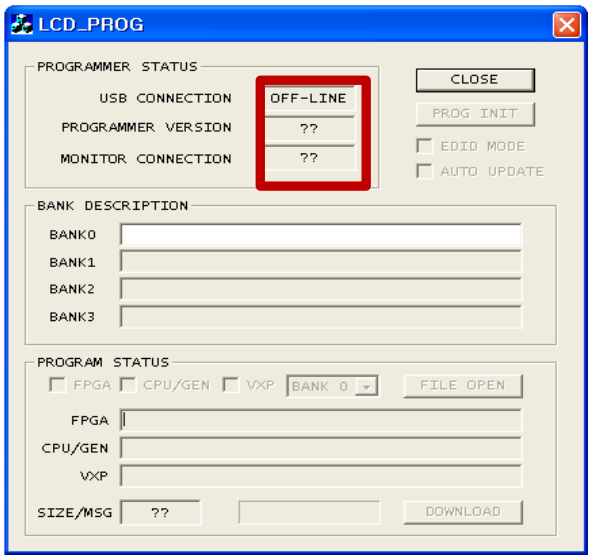
PROGRAM UPDATE – LMP200

4. How to Download Firmware to the LMP-200

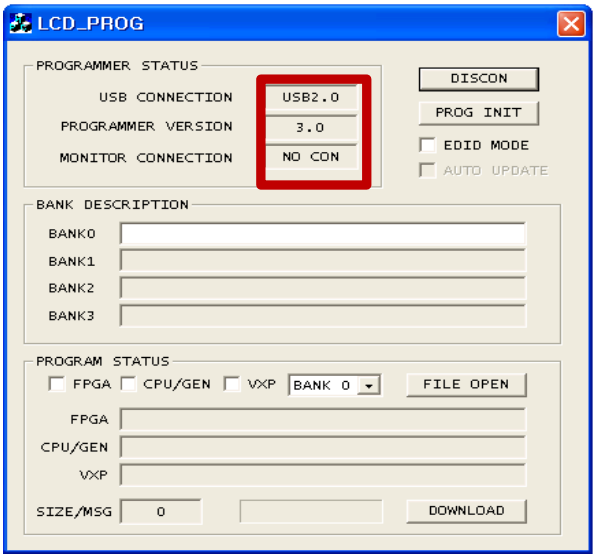
A. Connect the LMP-200 and your PC with USB cable.

B. Run "**LCD-PROG.exe**". If your connection between the LMP-200 and your PC is incorrect, a Message Window appears and the **Programmer Status** appears as **OFF-LINE**.



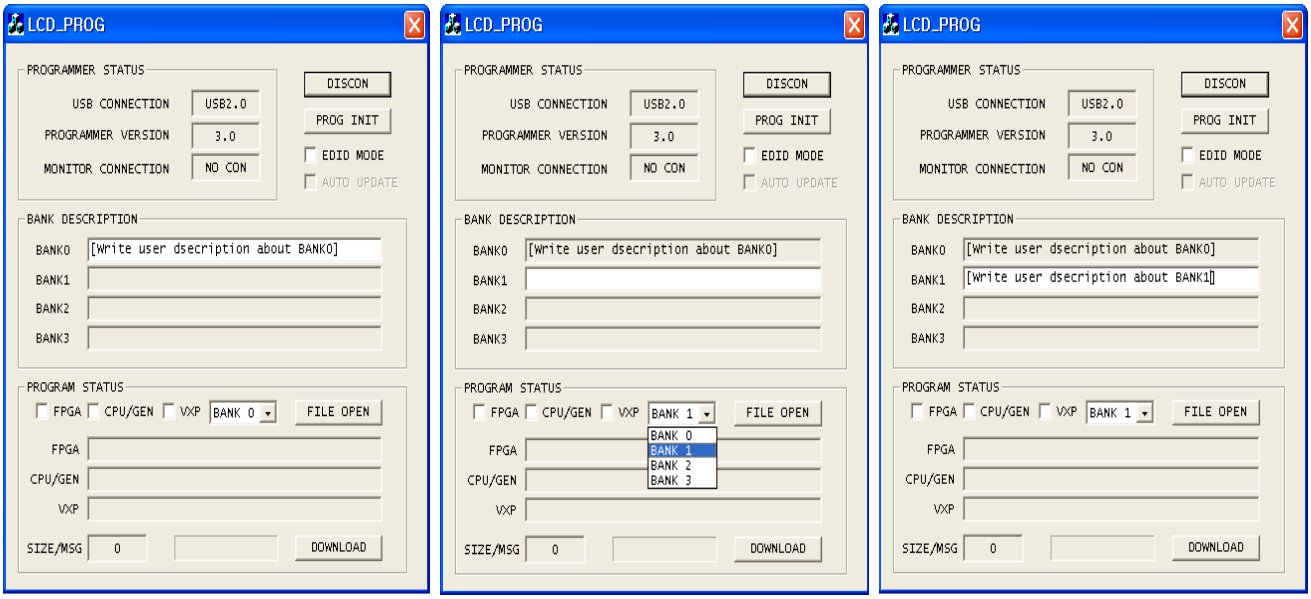


C. If you have a normal connection, the **Programmer Status** appears as **USB 2.0** Connection and the **Program Status** box activates.

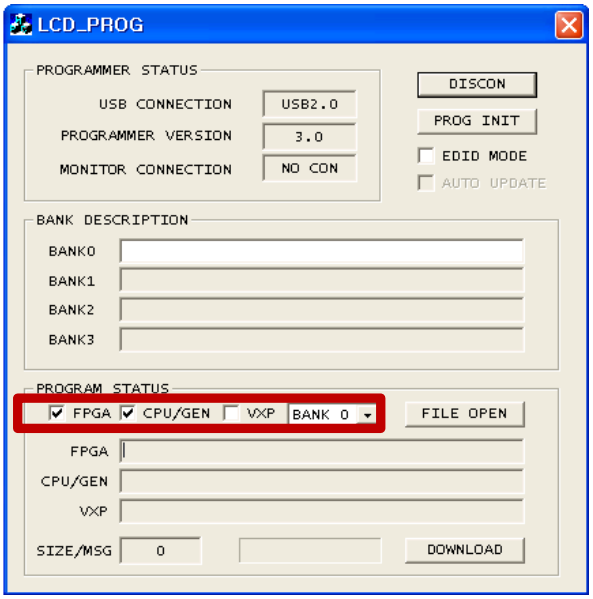


PROGRAM UPDATE – LMP200

D. Select the BANK Number from **BANK Selection Window** in the **Program Status** box (Available Banks for LMP-200 are BANK0~2 only). Selecting the BANK number activates the BANK's text box in the **BANK Description**.

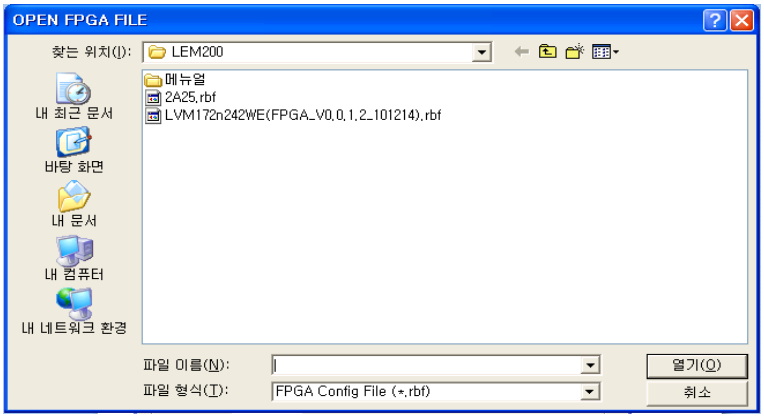


E. LQM-241W 는 FPGA와 CPU/GEN, VXP를 체크해 준다.



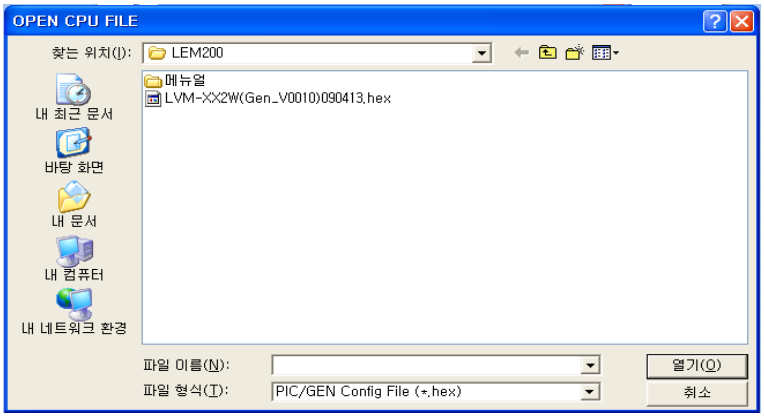
PROGRAM UPDATE – LMP200

F. Go to designated folder and then open files as following in order ; FPGA , CPU/GEN, and VXP.
(FPGA is 'rbf' format. CPU/GEN is 'hex' format. VXP is 'bin' format.)

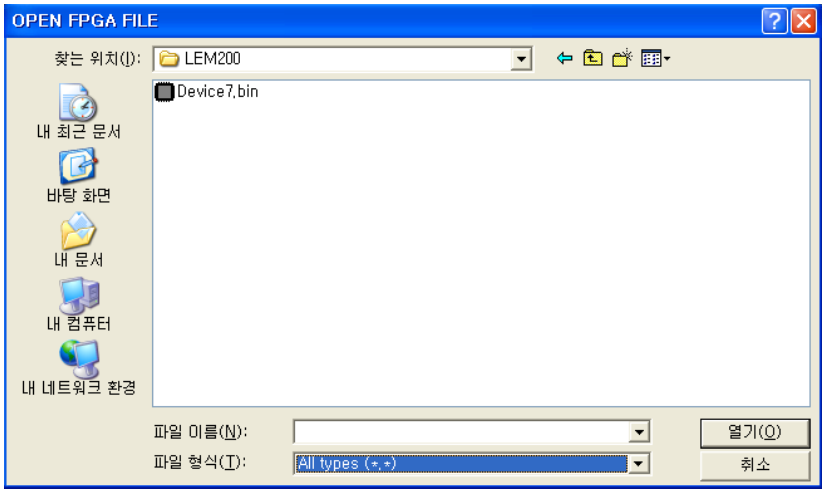


<= FPGA .rbf format

CPU/GEN .hex format =>



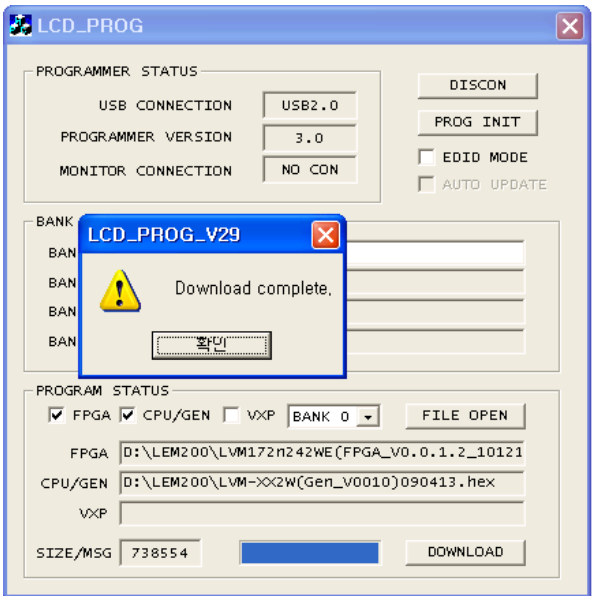
PROGRAM UPDATE – LMP200



<= VXP .bin format

H. Download selected firmware to LMP-200 on a BANK by clicking 'Download' button. .

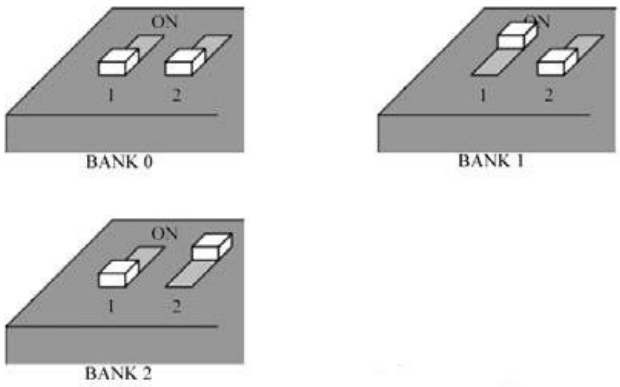
I. Click 'OK' button then disconnect a USB cable from LMP-200.



5. Dip S/W Setting

A. **BANK** Selection

i. Use the combination of **BNK0** and **BNK1** which is switch #1 and switch #2 to select the **BANK**. See the picture below.



[DIP s/w setting for BANK selection]

ii. Use switch # 3, 4, 5, and 6 to select the firmware (FPGA, CPU/GEN, GPU, or EDID) you wish to update.

Ex. 1) To update FPGA, CPU, and GPU (ex: BANK0)

BNK0=>off, BNK1=>off, FPGA=>on, CPU=>on, GPU=>on, EDID=>off

Ex. 2) To update GPU only (ex: BANK1)

BNK0=>on, BNK1=>off, FPGA=>off, CPU=>off, GPU=>on, EDID=>off

Ex. 3) To update EDID (ex: BANK2)

BNK0=>off, BNK1=>on, FPGA=>off, CPU=>off, GPU=>off, EDID=>on

PROGRAM UPDATE – LMP200

6. LCD Monitor Upgrade

A. Select the BANK and Firmware using the Dip S/W of LMP-200.

B. Connect the program download cable to the LMP-200 and your TVLogic Monitor's Facory PGM port.

C. Turn on the monitor and check if the LMP-200's PWR LED is on.

D. Push the START button to start the upgrade.

E. Upgrade progresses in the order of FPGA, CPU, and GPU. As upgrade progresses to each stage the LMP-200 sounds a beep and the status LED lights on for each stage.

F. When the upgrade finishes the LMP-200 sounds a melody and the status LED of problem stage flickers.

G. Turn off the monitor and unplug the program download cable from your monitor's Factory PGM port to finish.

7. How to update the LQM-241W

A. Download FPGA#A, ARM, and VXP#A files in BANK0.

B. Download FPGA#B and VXP#B in BANK1.

C. Download VXP#C in BANK2.

D. Connect LMP-200 to your LQM-241 Factory PGM-2 port. Select FPGA, CPU, and VXP in BANK1 then "CONFIG".

E. Connect LMP-200 to your LQM-241 Factory PGM1 port. Select FPGA and VXP in BANK1 then "CONFIG".

F. Connect LMP-200 to your LQM-241 Factory PGM1 port. Select VXP and EDID in BANK2 then "CONFIG".

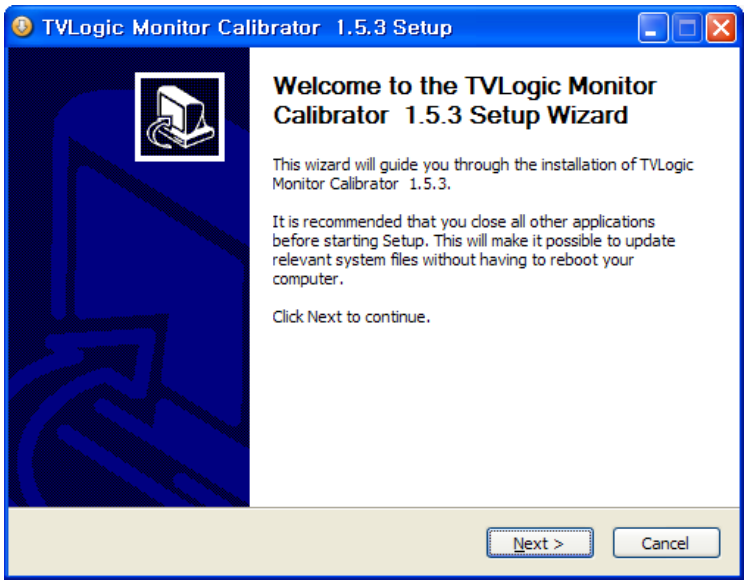
Calibration software installation

The calibration software requires these minimum hardware specifications:

CPU	*Pentium PC*
System	*Windows 98SE/2000/ME/XP*
Display	*Compatible all 24 bit video card*
	1024 x 768 resolution supporting windows 98/2000/XP

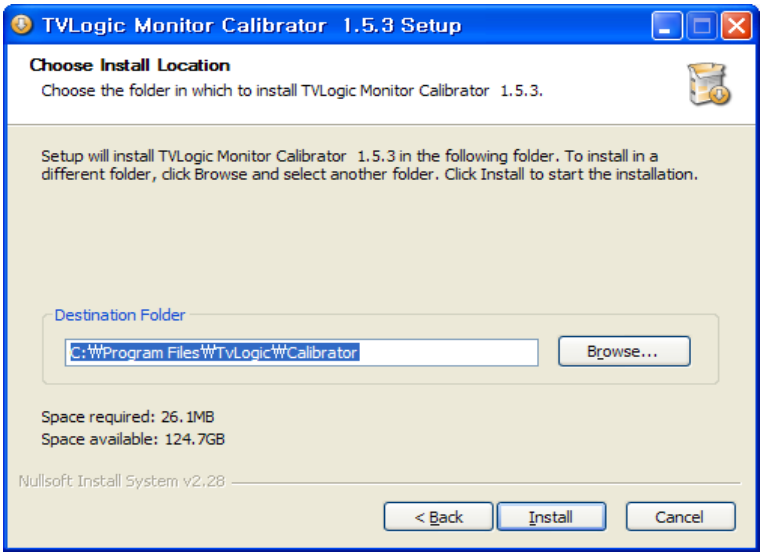
Step 1 TVLogic Calibration installation

1.1 Launch "CalibratorSetup.exe"
1.2 The "calibration program setup window" will launch as shown below.
Please click the "Next" button.

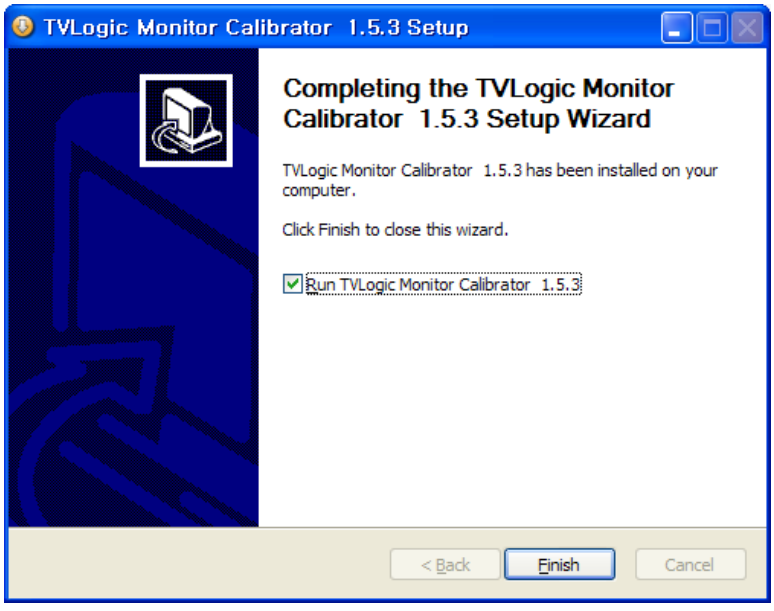


Calibration software installation

1.3 Designate the location where the program will be installed in your PC, and click the "Next" button.



1.4 If the user sees the image below, the installation was successful.



1.5 Please copy "LicenseKey.tvl" file into the ₩bin folder(found under the Calibration program directory)

Calibration software procedure

The purpose of our calibration tool is to optimize the colors of LCD displays by Compensating factors which affect the LCD panel. This calibration program is used for all of out LCD monitors. For a detailed calibration procedure, please refer to the following

Before Start.

1. Connect the monitor's factory RS232 port(PGM port) to the PC's serial port with the 9 pin serial cable. Please don't connect the serial cable to the monitor directly. Use additional cable or connector. RS232 port support model: 9 pin to 9 pin connector(TX,RX,GND only) PGM port support model : 15pin to 9 pin connector.

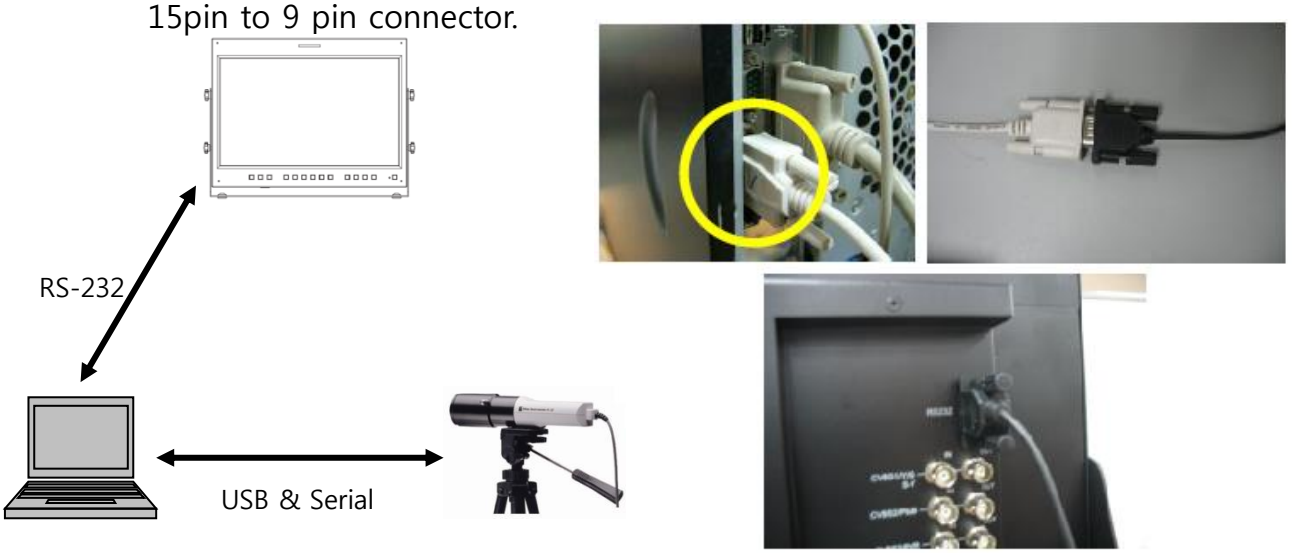


Fig 1: Connecting to the serial port

2. Connect measuring device and PC with serial cable or USB. Depending on measuring device, use proper cable.

3. When you connect to X-Rite, CA-210, CS-200 or Eye-One, please connect measuring device PC with USB port. Device driver provided by measuring device needs to be installed with USB connection device.

4. Locate the measuring device at display's center.

Set SDI-A as monitor's input source.

6. You can more accurate result when you calibrate after 30 min warm-up.

Calibration software procedure

Calibration procedure

1. Launch the calibration program. The main window appears as below.

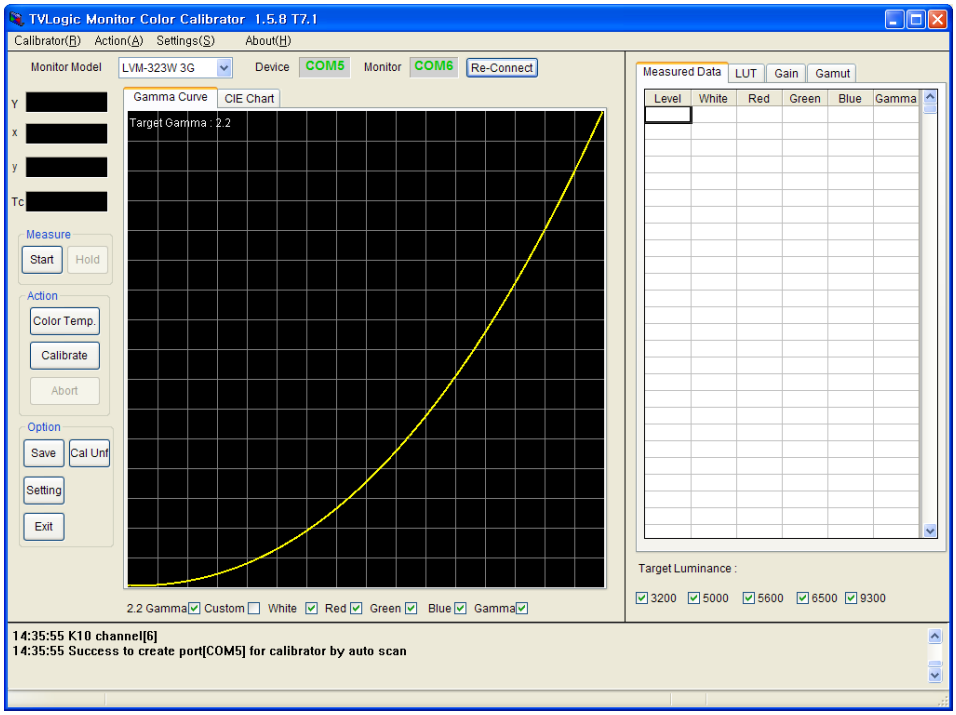


Fig 2 Calibration main window

2. The probe and the monitor's ports will be displayed on the top side of the screen. If see the port's sign highlighted in green, it is the connection between monitor and probe is well connected. If it is not, the port's sign will be highlighted in red.

Fig 3 Status of connected serial port

Calibration software procedure

3. Check the monitor model name is correct.

4. If measuring device is not connected, check [Measuring Device] setting.

[Setting] – [Device]- [Measuring Device]
You can set channel when you use K-10 probe.
If you did not add adjusted channel in K-10 probe, you can just use without channel change.

5. Set gamma and brightness before calibration.

[Setting]

[Calibration]
Gamma : 2.2
Target Luminance : 120 cd/m2
Measurement steps : 16

[Backlight]
Backlight Stabilization : Check

6. Click Calibrate button.
Calibration takes about 20~30min.

Calibration software procedure

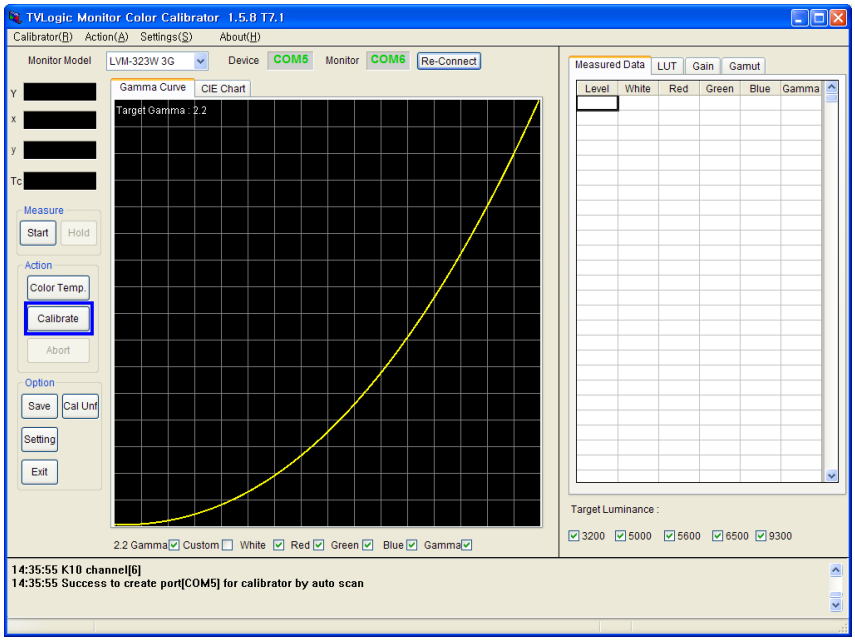


Fig 4 Program Calibrating Monitor

7. A message stating that "Finished calibrating LCD Panel" will be displayed if your calibration procedure is successful.

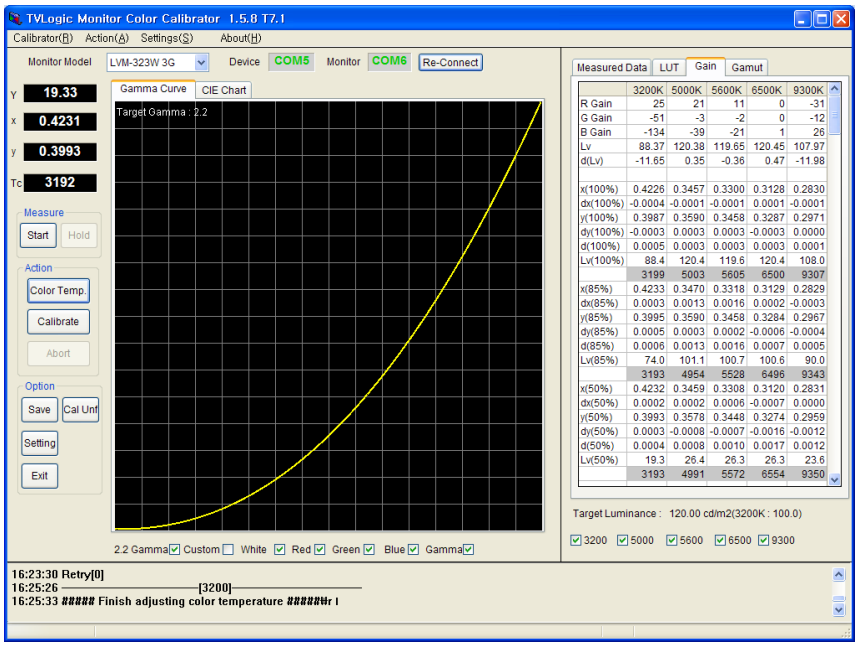


Fig 5 Completed Calibration

Calibration software procedure

Saving the Calibration data

1. To save the calibration result data, please click the "Save" button.

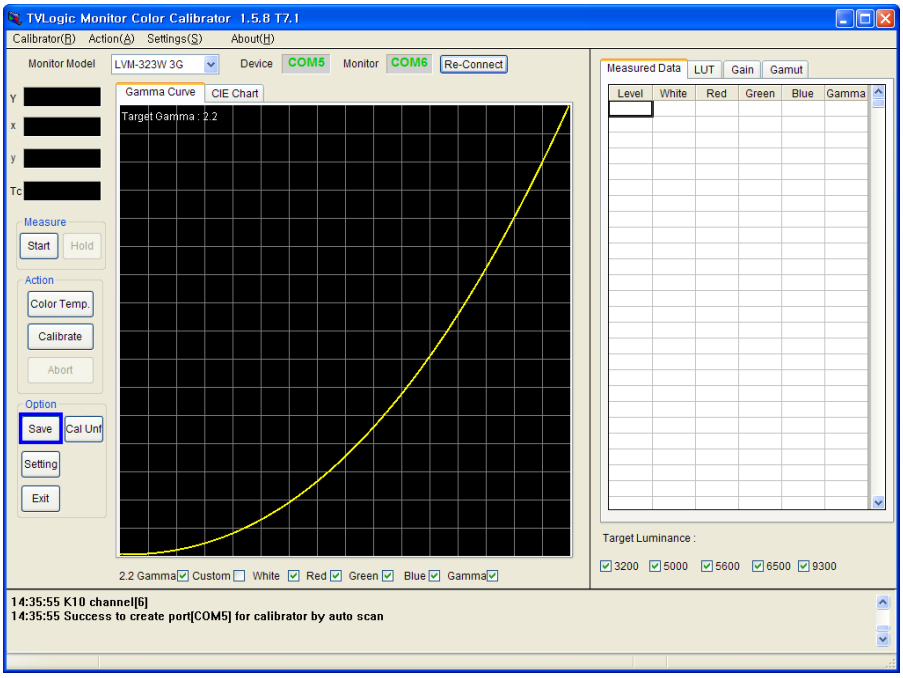


Fig 6 Save calibration result

2. Input the Monitor's serial number (or File name)

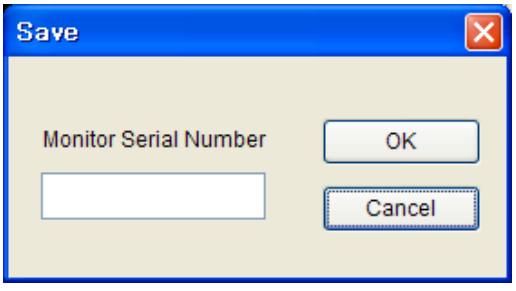


Fig 7: 파일 다이얼로그 저장

3. File will be saved under the directory: "C:/Program Files/TVLogic/Calibrator/data"

Calibration software setting

CL-Soft SETTINGS

The setting menu is located on the left-bottom side of the calibration program. Under The Settings menu, you can set the following various settings.

Calibration Tab

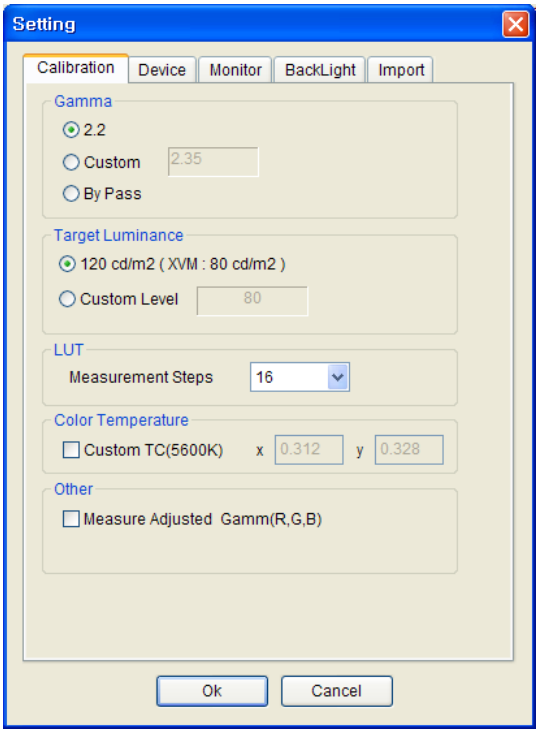


Fig 8 Setting Calibration dialog

Gamma

Gamma 2.2 is the default setting. However, the user can change it by using the "Custom" menu and also allows the user to bypass the Gamma adjustment by using "By pass" option.

Target Luminance

When adjusting for the color temperature, the user can set the target Luminance value. The user can also set the target luminance by using "Custom Level" menu.

Calibration software setting

Measurement Steps

When adjusting the Gamma value, each measuring interval from 1 to 64 steps can be selected. The lower figure, the more precise measuring data can be achieved. The recommended step size is 16.

Custom TC (5600K)

The user can program the custom color coordinates in 5600K color space.

Measure Adjusted Gamma(R, G, B)

This feature is used to measure red, green and blue after the gamma correction.

Calibration software setting

Device Tab

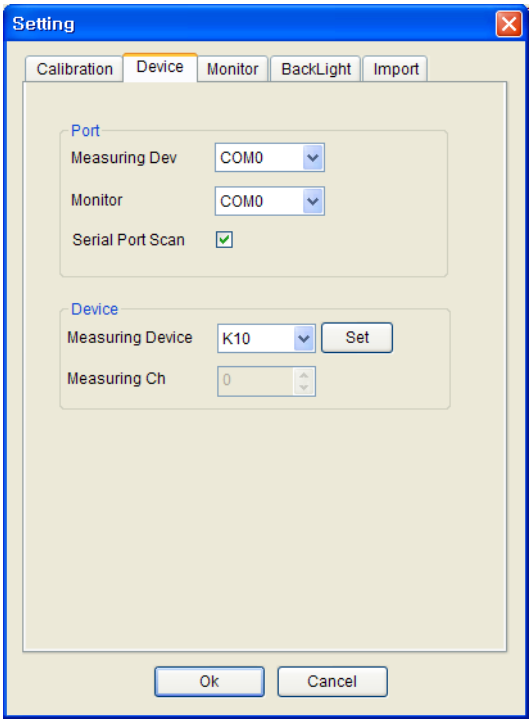


Fig 9 Setting communication dialog

Measuring Dev
Measurement device port selection

Monitor
Monitor connection port selection

Serial Port Scan
Activates automatic port scan for connected devices.

Measuring Device

A user can choose from 7 different probes:
Klein K-10, X-Rite (DTP94), CA-210, CS-200, DK-PM5639, Eye-One, Specbos 1211

Selectable option on each measuring device
Set (K-10) : channel selecting
0 Cali(CA-210) : Zero calibration function
Measuring Ch(CA-210) : channel selecting

Calibration software setting

Monitor Tab

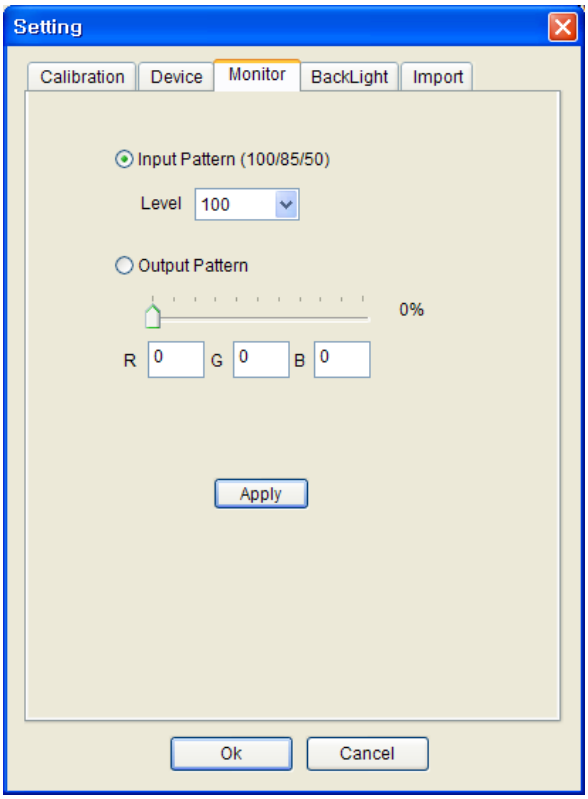


Fig 10 Setting pattern dialog

Input Pattern/Output Pattern

The user can display the input pattern or output pattern on the monitor. The input level can be selected between ranges of 50, 85 and 100. Each output level for R, G, and B can be selected from 0 to 255(8bit) and 1024 step(10bit).
After the input of the appropriate values, click the "Apply" button.

Calibration software setting

BackLight Tab

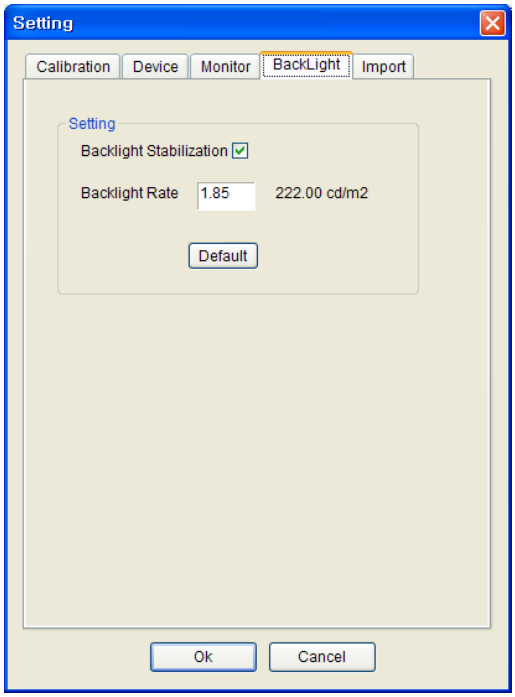


Fig 11 Setting backlight dialog

Backlight Stabilization

To get correct calibration data, LCD monitors must be stabilization.
It takes time about 20 ~ 60min. We recommend you to select “Backlight Stabilization”.
If you select it, calibration will run after stabilizing Backlight.

Backlight Rate

Set Backlight rate what you want to brightness.

Calibration software setting

TIP . K-10 setting

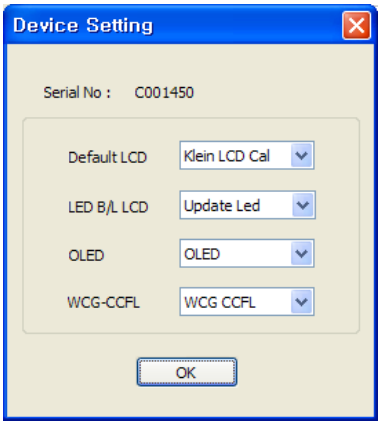


Fig 14 Device setting

Device Setting

When K-10 is first-connected to PC, "Device Setting" window pops up as above.

Default LCD

This channel is used for color calibration normal LCD display which is CCFL backlight type.

LED B/L LCD

This channel is used for color calibration of LED backlight type displays like XVM-245W

OLED

This channel is used for color calibration of OLED panel equipped displays.

WCG-CCFL

This channel is used for color calibration of LCD display which is Wide Color Gamut – CCFL backlight type.

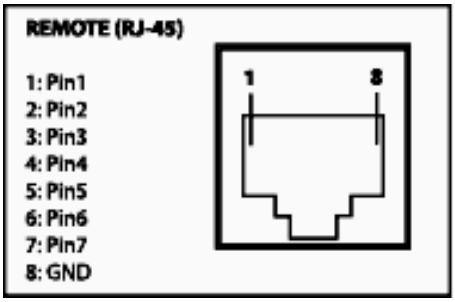
Calibration software setting

※ After setting completes once, window as above never shows up again.
If you want to set the menu again, click[Setting] and select [Calibration] tap.
and then click Set button in [Measure Device].

Circuit Operation Explanation

<GPI Remote>

- Each pin's position is as following.



- You can set the function of PIN 1 ~ PIN 6 as following.

- Whether you set up using REMOTE function or not. .
- By designating each pins, you can use its functions from the outside.
- Factory setting is as following:
  PIN 1 : ANALOG CHANNEL
  PIN 2 : MODE CHANNEL
  PIN 3 : QUAD CHANNEL
  PIN 4 : TALLY R
  PIN 5 : TALLY G
  PIN 6 : UNDER SCAN
- PIN 7 is for turning monitors ON/OFF. PIN 8 is fixed in GND.
- You can set the function of PIN 1 ~ PIN 6 as following.

Menu Classification	Settable Values
PIN 1~6	NONE, ANALOG CHANNEL, MODE CHANNEL, QUAD CHANNEL, TALLY R, TALLY G, UNDER SCAN, 1:1 SCAN, ASPECT, H/V DELAY, BLUE ONLY, MONO, 16:9 MARKER, 4:3 MARKER, 4:3 ON AIR MARKER, 15:9 MARKER, 14:9 MARKER, 13:9 MARKER, 1.85:1 MARKER, 2.35:1 MARKER, 1.85:1&4:3 MARKER, CENTER MARKER, SAFETY AREA 80%, SAFETY AREA 85%, SAFETY AREA 88%, SAFETY AREA 90%, SAFETY AREA 93%, SAFETY AREA 100%, 708, 608(LINE 21), 608(ANC), DYNAMIC-UMD

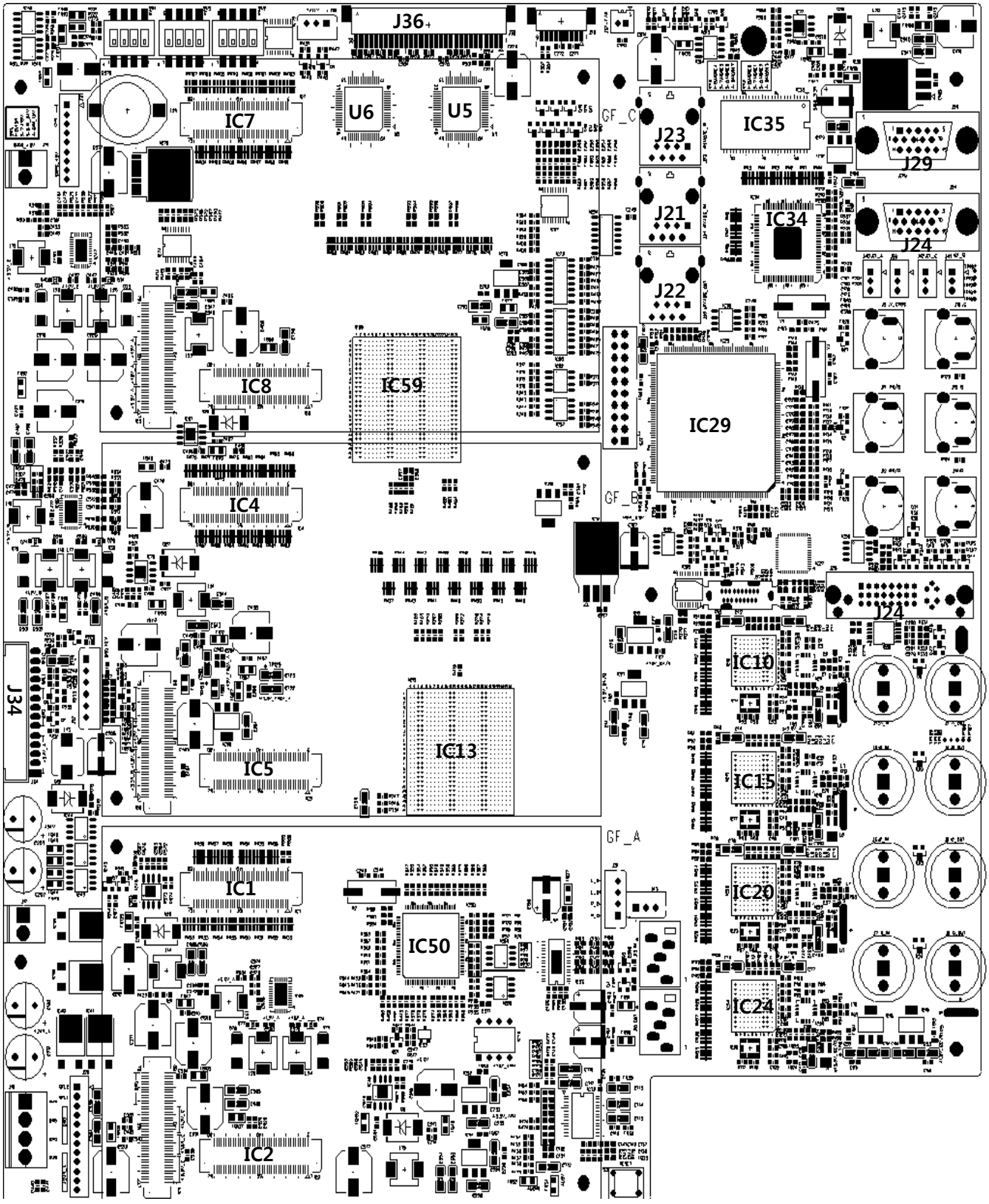
<LQM-241W>

<Video Input>

- How to connect Analog video signal.

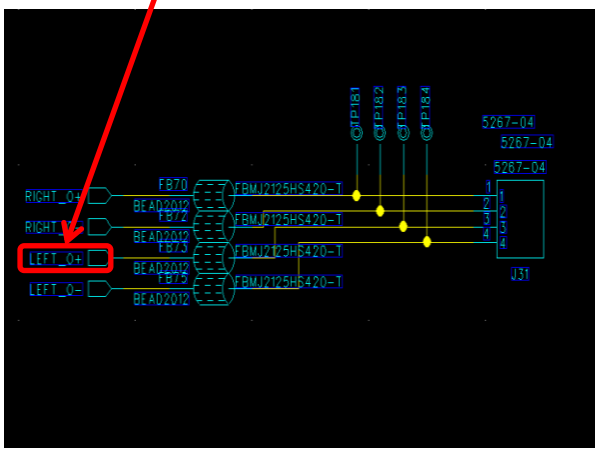
Connector	Composite	Component		S-Video
1	CVBS 1	Y	G	Y
2	CVBS 2	Pb	B	No Con.
3	CVBS 3	Pr	R	C

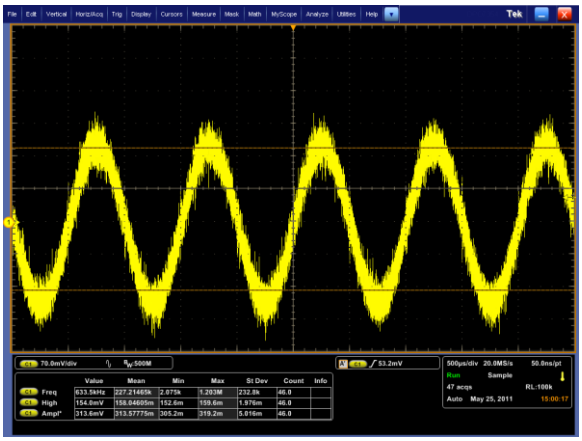
Circuit board drawing



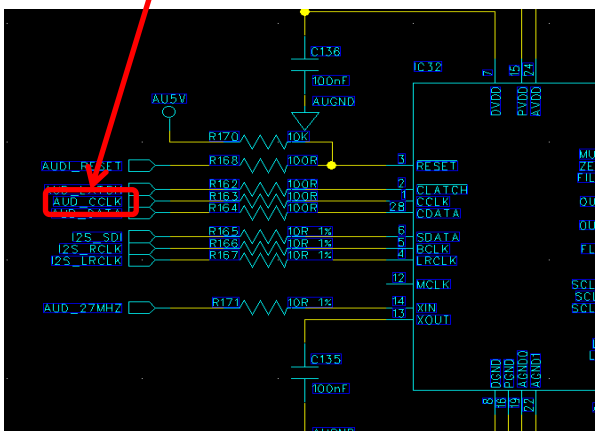
Oscilloscope

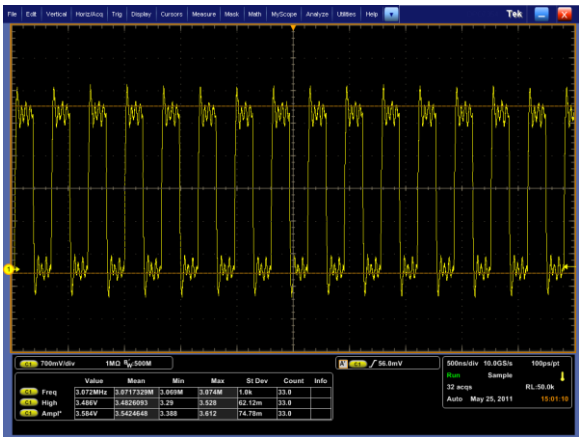
- LEFT_O+



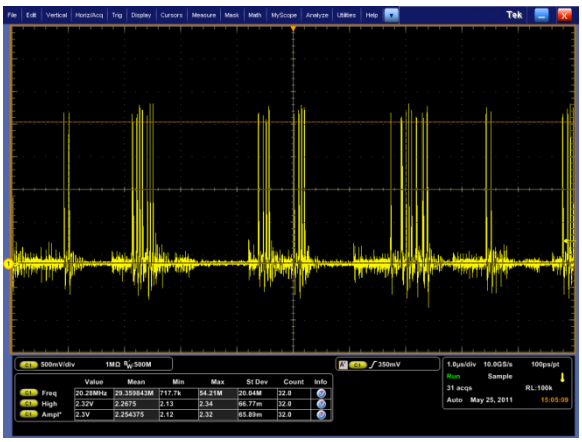


- AUDIO_BCLK



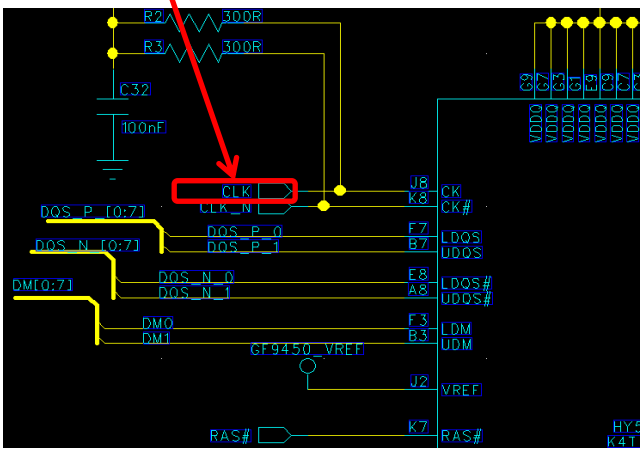


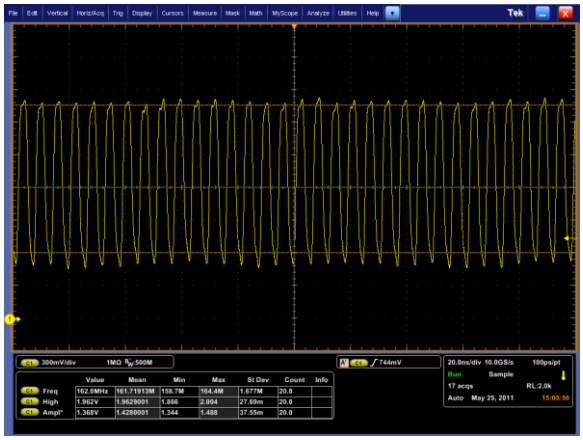
- ADDR_R_0



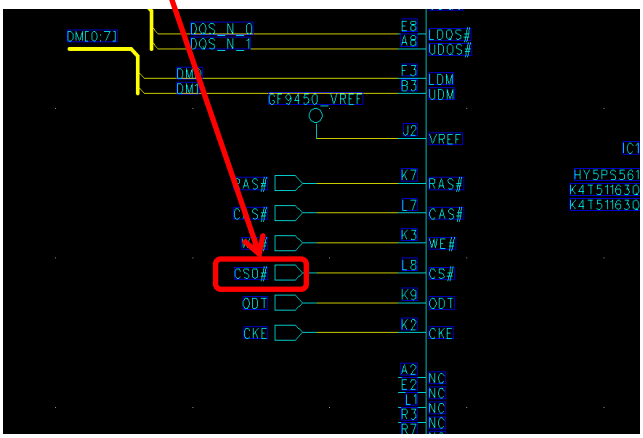
Oscilloscope

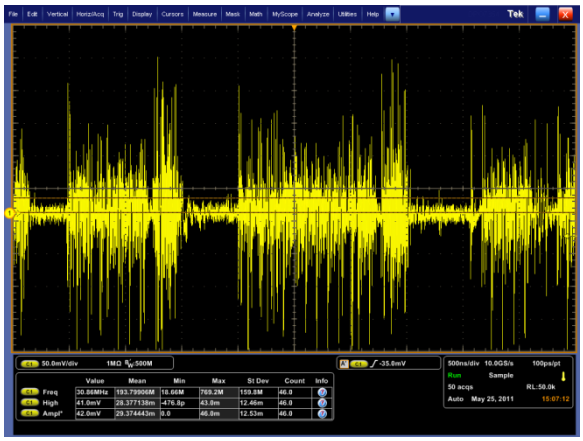
- CLK



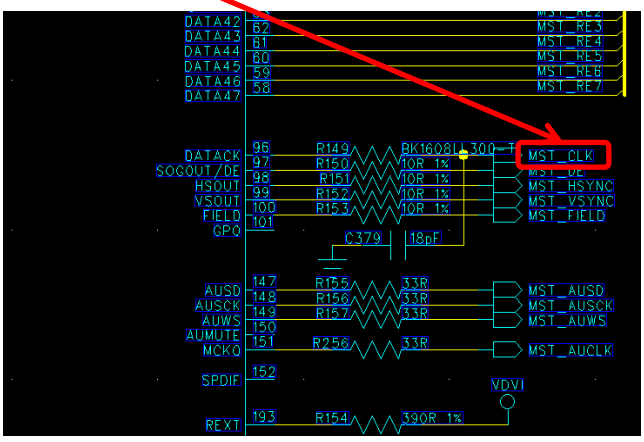


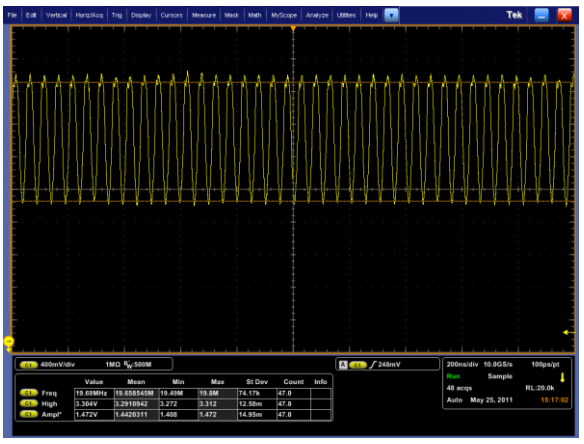
- CS0#





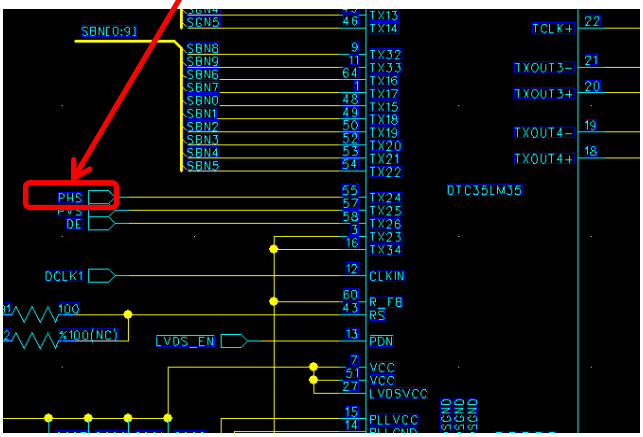
- MST_CLK

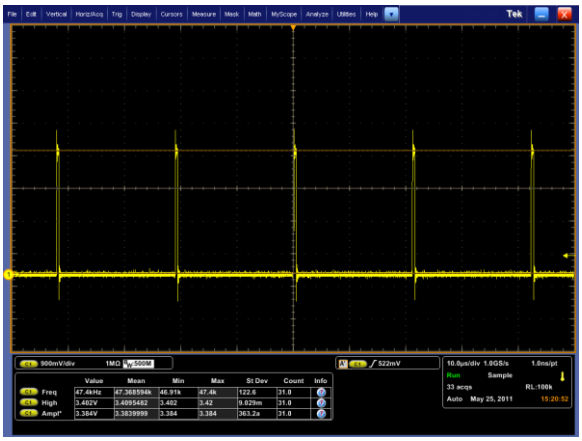




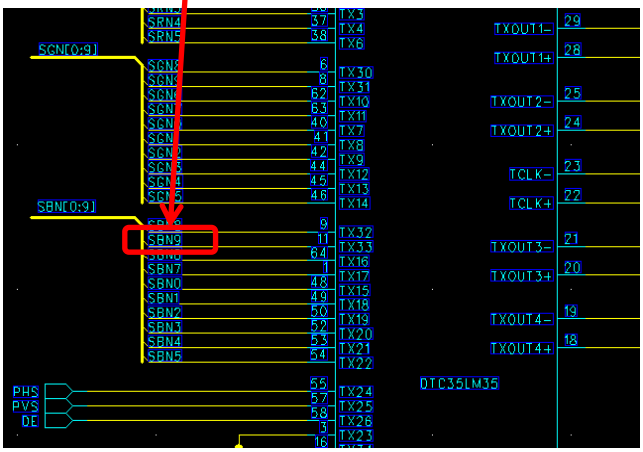
Oscilloscope

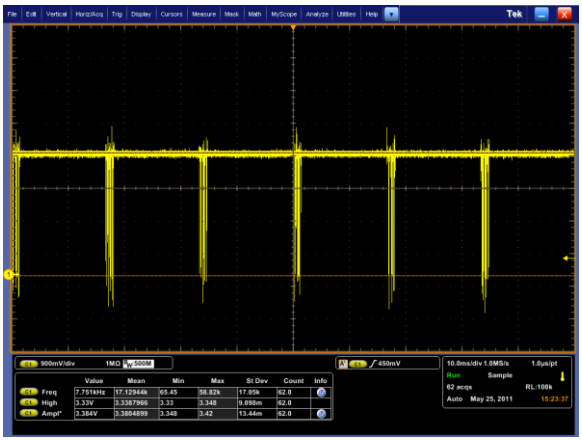
- PHS



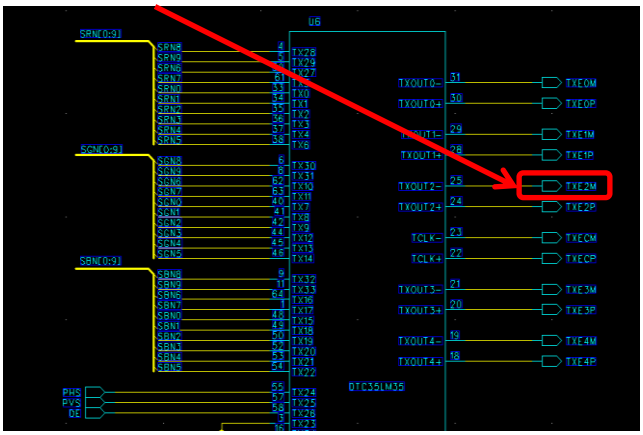


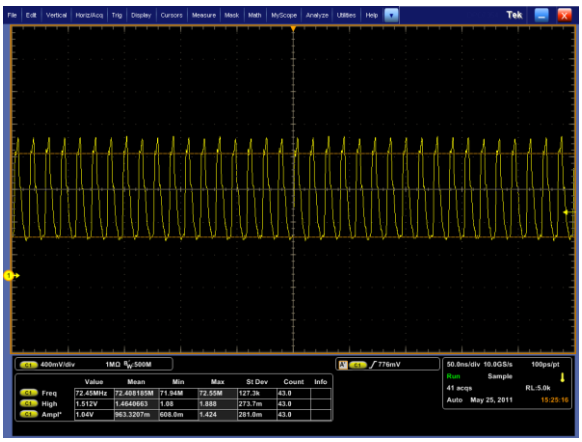
- SBN9





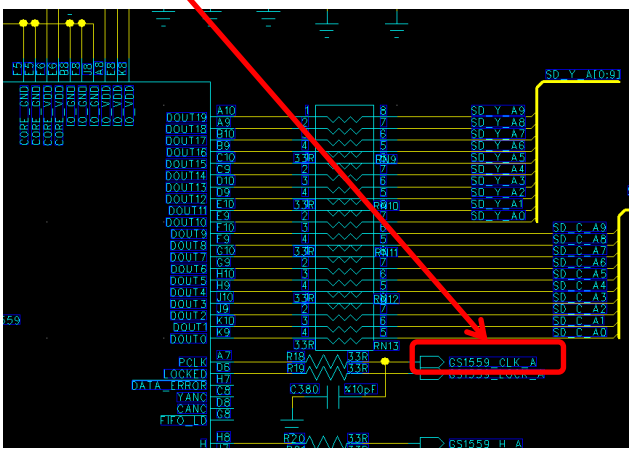
- TXE2M

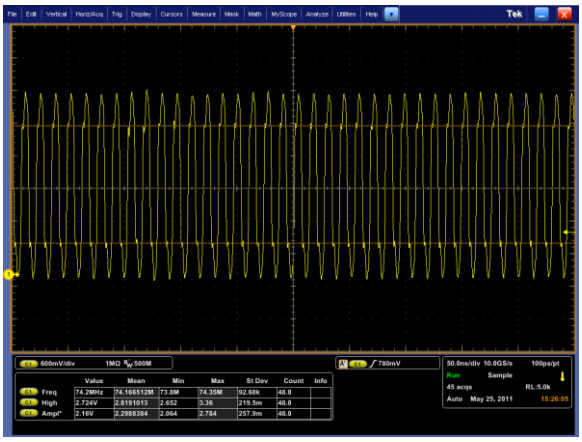




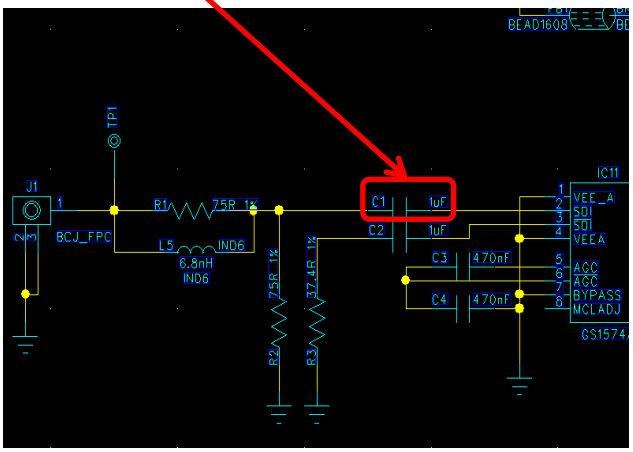
Oscilloscope

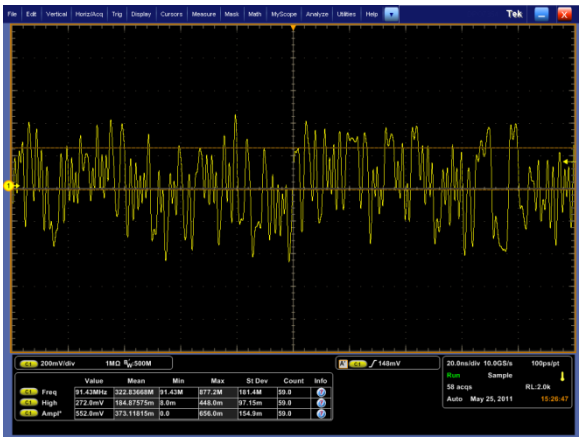
- GS1559_CLK_A



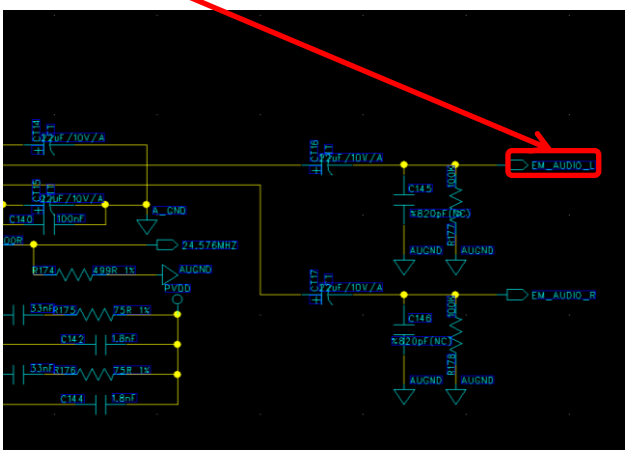


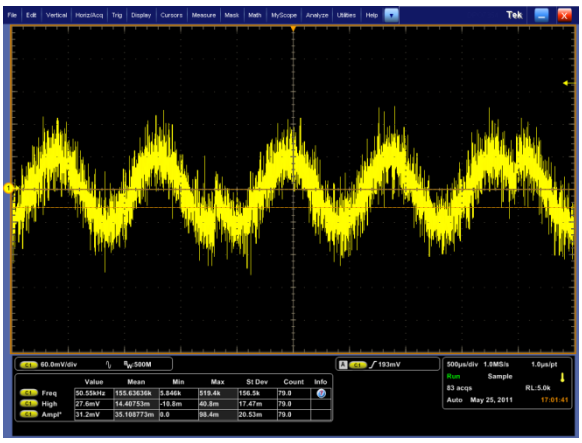
- SDI_IN





- EM_AUDIO_L





Pin Assignment Specification

No	Sign
1	RESET_OUT
2	RX_9450B
3	TX_9450B
4	DW_EN
5	RX_9450C
6	DCLK_B_EPC
7	TX_9450C
8	CONF_DONE_B_EPC
9	3.3V
10	NCONFIG_B_EPC
11	NCE_B_EPC
12	DATA_B_EPC
13	NCS_B_EPC
14	ASD_B_EPC
15	GND

Reference No : J29
Item : RS232 Control

No	Sign
1	RESET_OUT
2	RX_9450A
3	TX_9450A
4	DW_EN
5	CPU_RX
6	DCLK_A_EPC
7	CPU_TX
8	CONF_DONE_A_EPC
9	3.3V
10	NCONFIG_A_EPC
11	NCE_A_EPC
12	DATA_A_EPC
13	NCS_A_EPC
14	ASD_A_EPC
15	GND

Reference No : J24
Item : RS232 Control

Pin Assignment Specification

No	Sign
1	RIGHT_0 +
2	RIGHT_0 -
3	LEFT_0 +
4	LEFT_0 -

Reference No : J31
Item : Speaker

No	Sign
1	+24V_A
2	GND
3	GND
4	+24V_A

Reference No : J18
Item : DC Jack

No	Sign
1	+24V_A
2	+24V_A
3	+24V_A
4	+24V_A
5	+24V_A
6	GND
7	GND
8	GND
9	GND
10	GND
11	BKL_SCL
12	BKL_EN
13	BKL_CTRL
14	BKL_SDA

Reference No : J24
Item : Inverter

Pin Assignment Specification

No	Sign
1	TALLY_G
2	GND
3	TALLY_R

Reference No : J36
Item : Tally

No	Sign
1	GND
2	TXE4M
3	TXE4P
4	GND
5	TXO4M
6	TXO4P
7	GND
8	BKL_SCL
9	BKL_SDA

Reference No : J22
Item : LVDS

No	Sign
1	MOD_PWR
2	MOD_PWR
3	MOD_PWR
4	MOD_PWR
5	MOD_PWR
6	3.3V
7	GND
8	TXO3P
9	TXO3M
10	TXOCP
11	TXOCM
12	TXO2P
13	TXO2M
14	GND
15	TXO1P
16	TXO1M
17	GND
18	TXO0P
19	TXO0M
20	TXE3P
21	TXE3M
22	TXECP
23	TXECM
24	GND
25	TXE2P
26	TXE2M
27	TXE1P
28	TXE1M
29	TXE0P
30	TXE0M

Reference No : J30
Item : LVDS

Pin Assignment Specification

No	Sign
1	TX_H
2	TX_L
3	RX_H
4	NC
5	NC
6	RX_L
7	NC
8	GND
9	GND
10	GND

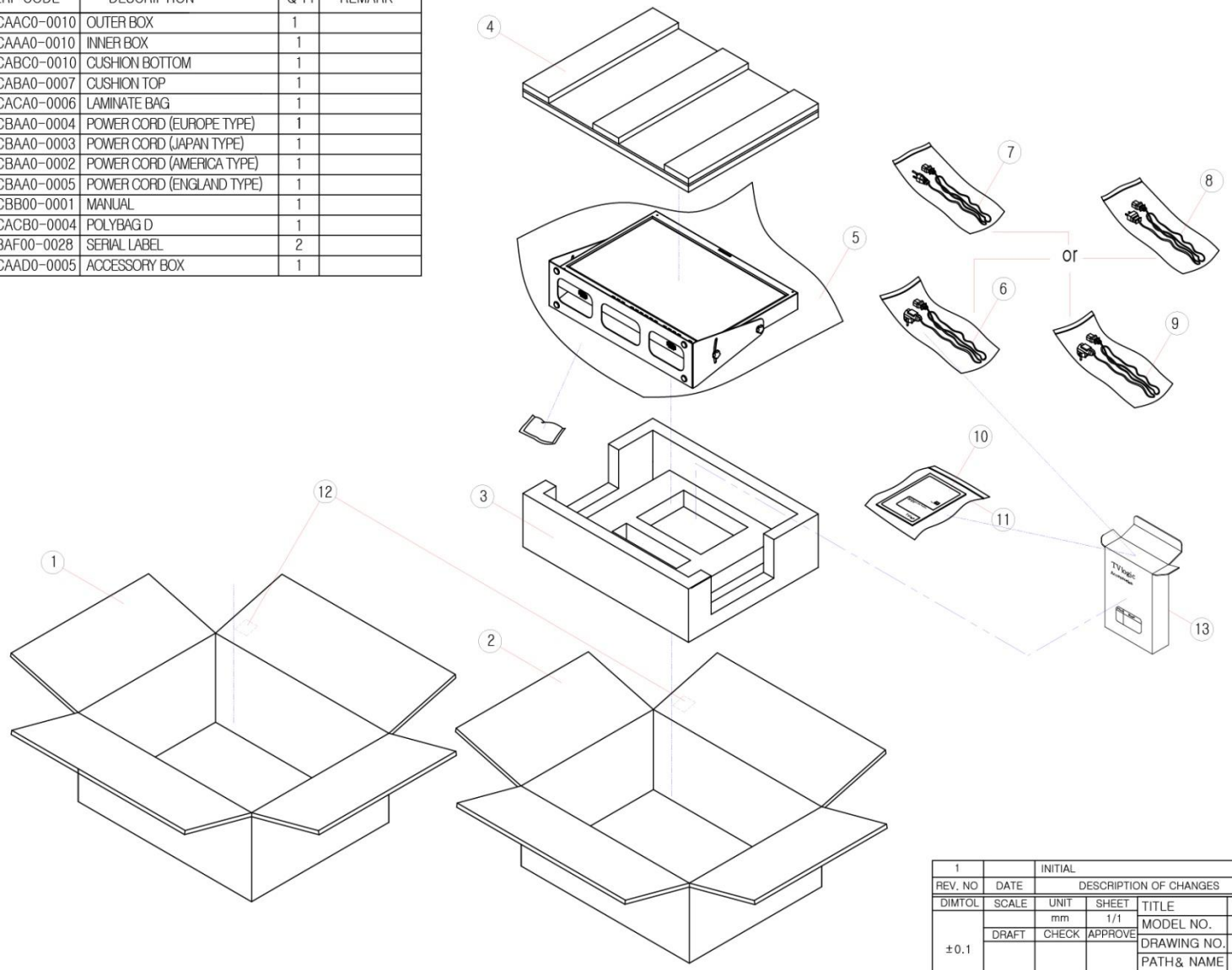
Reference No : U22
Item : GPI Out

No	Sign
1	REMOTE0
2	REMOTE1
3	REMOTE2
4	REMOTE3
5	REMOTE4
6	REMOTE5
7	REMOTE6
8	GND
9	GND
10	GND

Reference No : U26
Item : GPI Remote

Packing

NO	ERP CODE	DESCRIPTION	Q'TY	REMARK
1	CAAC0-0010	OUTER BOX	1	
2	CAAA0-0010	INNER BOX	1	
3	CABC0-0010	CUSHION BOTTOM	1	
4	CABA0-0007	CUSHION TOP	1	
5	CACA0-0006	LAMINATE BAG	1	
6	CBAA0-0004	POWER CORD (EUROPE TYPE)	1	
7	CBAA0-0003	POWER CORD (JAPAN TYPE)	1	
8	CBAA0-0002	POWER CORD (AMERICA TYPE)	1	
9	CBAA0-0005	POWER CORD (ENGLAND TYPE)	1	
10	CBB00-0001	MANUAL	1	
11	CACB0-0004	POLYBAG D	1	
12	BAF00-0028	SERIAL LABEL	2	
13	CAAD0-0005	ACCESSORY BOX	1	



1		INITIAL		
REV. NO	DATE	DESCRIPTION OF CHANGES		APPROVE
DIMTOL	SCALE	UNIT	SHEET	TITLE
		mm	1/1	MODEL NO. 24"
±0.1	DRAFT	CHECK	APPROVE	DRAWING NO.
				PATH& NAME
	11-04-13			TV LOGIC INC.

MEMO

Developed by
TVlogic

For more information please visit : http://www.tvlogic.co.kr
#914 Acehighend Tower 8, 345-4 Gasan-dong, Geumcheon-gu, Seoul, 153-782, KOREA
Tel : +82-70-8668–6611, Fax : +82-2-6123–3201, Email: sales@tvlogic.co.kr